

Use Attainability Analysis

for

WBID 1326 Little Drywood Creek

Submitted by
SES, Inc.

To
Missouri Department of Natural Resources
Water Protection Program

Date Received: October 26, 2007

Field Data Sheets for Recreation Use Stream Surveys

Data Sheet A - Water Body Identification

I. Water Body Information (For water body being surveyed)

Water Body Name (from USGS 7.5' quad):	L. Drywood Creek		
Missouri Water Body Identification (WBID) Number:	1326		
8 digit HUC code:	10290104	County:	Vernon, Barton
Upstream Legal Description (from Table H): T33N R31W 28			
Downstream Legal Description (from Table H): T34N R32W 12			
Number of sites evaluated:	6		
List all site numbers, listed consequently upstream to downstream: 1, 6, 5, 2, 3, 4			

Site Locations Map(s): Attach a map of the entire segment with assessment sites clearly labeled.
Mark any other items that may be of interest.

II. Facility Information (list all permitted discharges to the water body segment)

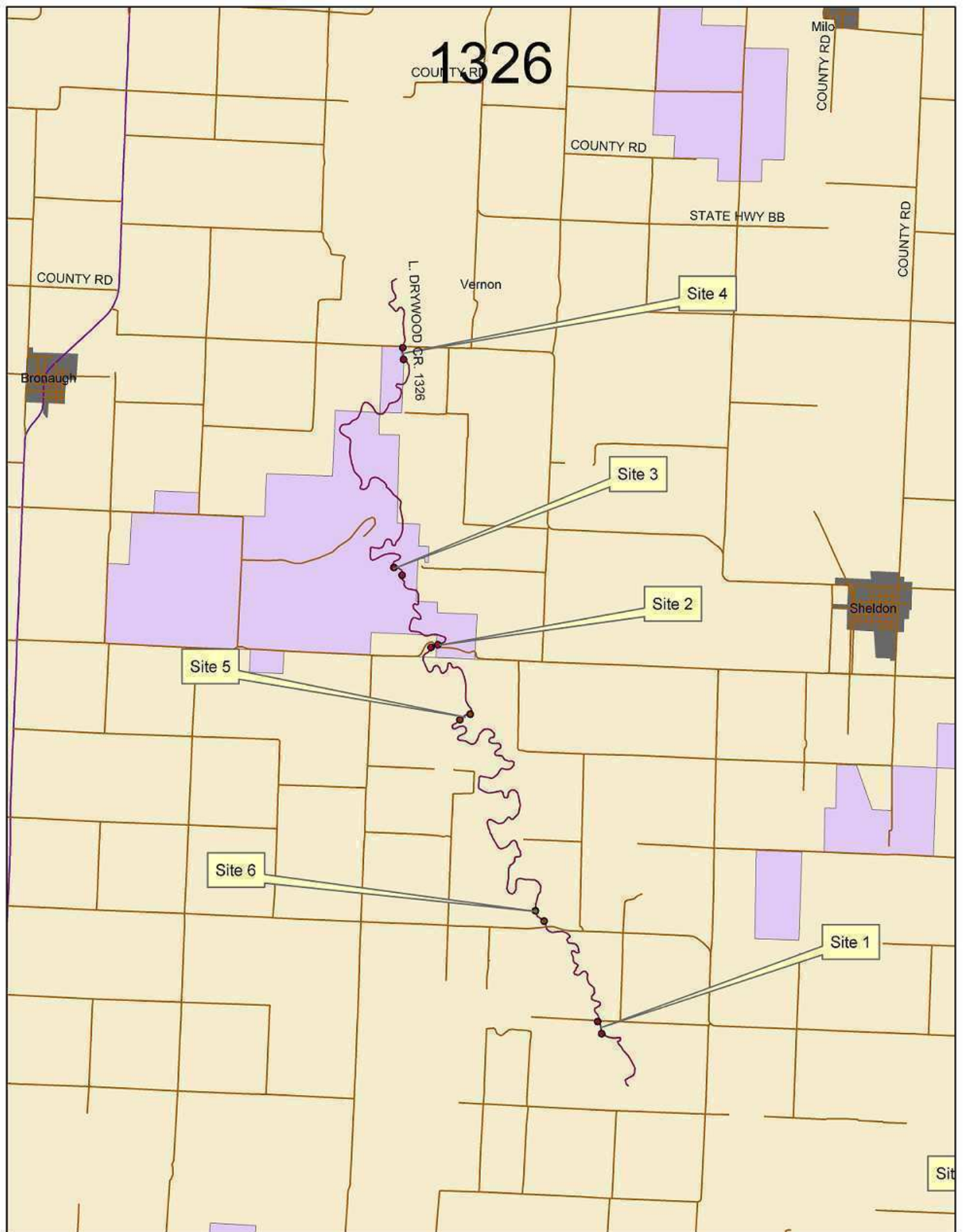
Facility Name(s) and Permit Number(s): Lamar Sanitary and Demolition MO0112046
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III. UAA Surveyor (please print legibly)

Name of Surveyor:	Aaron Ball	Telephone Number:	913-307-0046
Organization/Employer:	SES, Inc		

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Signed: Aaron Ball **Date:** 10/23/2007



WBID # 1326
 Site # 1

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 9/28/07 10:00am	Site Location Description (e.g. road crossing):
Personnel: Larissa Brown, Aaron Ball	60 RD crossing
Current Weather Conditions: clear	Facility Name: Lamar Sanitary and Demolition
Weather conditions for the past 10 days: 4 in rain	Permit Number: MO0112046
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)			
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0380653	4160936	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0380578	4161154	

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
81	downstream	82	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 1326
Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments:				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel	30	% Sand	10%	Silt	60%	Mud/Clay	% Bedrock
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Aquatic Vegetation:

None

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input checked="" type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # _1326_____

Site # __1_____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

None

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: Aaron Ball Date of Survey: 9/28/2007

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>1326</u> Site #: <u>1</u> Estimated Channel Incision: <u>3</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0380653</u> UTM Y: <u>4160936</u> +/- <u> </u> (meters) 11 UTM X: <u>0380578</u> UTM Y: <u>4161154</u> +/- <u> </u> (meters) Average Stream Width: <u>9</u> (meters) Length of Survey Segment: <u>180</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown, Aaron Ball</u>	Dissolved Oxygen Date: <u>9/28/07</u> Time: <u>10:00</u> DO Meter Dissolved Oxygen: <u>Not Working</u> (mg/L) Dissolved Oxygen: <u> </u> (% sat) Specific Cond: <u> </u> (µS/cm) Water Temperature: <u> </u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.6	0.1	0.7	0.5	0.7	0.4	0.7	0.2	1	0.3	0.9	0.5	0.5	0.1	0.7	0.3	0.7	0.3	1	0.25	0.4	0.3
2	1.2	0.2	1.4	0.65	1.4	0.5	1.4	0.5	2	0.5	1.8	0.4	1	0.15	1.4	0.4	1.4	0.6	2	0.45	0.8	0.4
3	1.8	0.2	2.1	0.65	2.1	0.7	2.1	0.3	3	0.5	2.7	0.05	1.5	0.2	2.1	0.4	2.1	0.8	3	0.75	1.2	0.6
4	2.4	0.2	2.8	0.65	2.8	0.75	2.8	0.3	4	0.5	3.6	0.1	2	0.25	2.8	0.4	2.8	0.8	4	0.9	1.6	0.75
5	3	0.2	3.5	0.65	3.5	0.7	3.5	0.5	5	0.5	4.5	0	2.5	0.3	3.5	0.35	3.5	0.75	5	1	2	0.65
6	3.6	0.15	4.2	0.7	4.2	0.7	4.2	0.45	6	0.5	5.4	0	3	0.4	4.2	0.25	4.2	0.8	6	1	2.4	0.5
7	4.2	0.2	4.9	0.8	4.9	0.6	4.9	0.4	7	0.75	6.3	0.25	3.5	0.4	4.9	0.2	4.9	0.8	7	0.9	2.8	0.4
8	4.8	0.2	5.6	0.55	5.6	0.4	5.6	0.3	8	0.6	7.2	0.4	4	0.3	5.6	0.15	5.6	0.7	8	0.7	3.2	0.2
9	5.4	0.2	6.3	0.45	6.3	0.3	6.3	0.2	9	0.45	8.1	0.35	4.5	0.2	6.3	0.1	6.3	0.65	9	0.6	3.6	0.15
Right Bank	6	0	7	0	7	0	7	0	10	0	9	0	5	0	7	0	7	0	10	0	4	0
Feature Type (riffle, run, or pool)	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

1 MAXIMUM

0.4 MEDIAN

Signed: Aaron Ball Date: 9/28/07

WBID # 1326
 Site # 2

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 9/28/07 12:36	Site Location Description (e.g. road crossing):
Personnel: Larissa Brown, Aaron Ball	NW 100 RD crossing
Current Weather Conditions: clear	Facility Name: Lamar Sanitary and Demolition
Weather conditions for the past 10 days: 4 in rain	Permit Number: MO0112046
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, in Meters)			
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0377664	4168015	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0377537	4167967	

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
83	downstream	84	Upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 1326
Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:

Comments:

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering

comments/other:

none

Substrate:

% Cobble	% Gravel	% Sand	50 % Silt	50% Mud/Clay	% Bedrock
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Aquatic Vegetation:

None

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # __1326_____
Site # ____2____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

None

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: Aaron Ball Date of Survey: 9/28/2007

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>1326</u> Site #: <u>2</u> Estimated Channel Incision: <u>3</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0377664</u> UTM Y: <u>4168025</u> +/- <u> </u> (meters) 11 UTM X: <u>0377537</u> UTM Y: <u>4167967</u> +/- <u> </u> (meters) Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown, Aaron Ball</u>	Dissolved Oxygen Date: <u>9/28/07</u> Time: <u>12:30</u> DO Meter Dissolved Oxygen: <u>Not Working</u> (mg/L) Dissolved Oxygen: <u> </u> (% sat) Specific Cond: <u> </u> (µS/cm) Water Temperature: <u> </u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.3	0.1	0.2	0.2	0.7	0.1	0.6	0.45	0.6	0.4	0.6	0.6	0.8	0.2	0.9	0.5	0.7	0.8	0.8	0.8	0.8	0.8
2	0.6	0.2	0.4	0.25	1.4	0.2	1.2	0.8	1.2	0.7	1.2	1	1.6	0.45	1.8	0.6	1.4	0.9	1.6	1	1.6	0.85
3	0.9	0.25	0.6	0.2	2.1	0.4	1.8	0.95	1.8	0.9	1.8	1	2.4	0.2	2.7	0.75	2.1	1	2.4	1	2.4	1
4	1.2	0.25	0.8	0.2	2.8	1	2.4	1	2.4	0.9	2.4	1	3.2	0.2	3.6	0.9	2.8	1	3.2	1	3.2	1
5	1.5	0.25	1	0.1	3.5	1	3	0.9	3	0.95	3	1	4	0.1	4.5	0.9	3.5	1	4	1	4	1
6	1.8	0.2	1.2	0.1	4.2	1	3.6	0.8	3.6	0.95	3.6	1	4.8	0.3	5.4	0.95	4.2	1	4.8	1	4.8	1
7	2.1	0.3	1.4	0.1	4.9	1	4.2	0.8	4.2	0.9	4.2	0.95	5.6	0.4	6.3	0.85	4.9	1	5.6	1	5.6	1
8	2.4	0.25	1.6	0.1	5.6	0.95	4.8	0.7	4.8	0.8	4.8	0.8	6.4	0.5	7.2	0.7	5.6	0.9	6.4	1	6.4	0.9
9	2.7	0.2	1.8	0.1	6.3	0.75	5.4	0.6	5.4	0.7	5.4	0.75	7.2	0.35	8.1	0.5	6.3	0.75	7.2	1	7.2	0.6
Right Bank	3	0	2	0	7	0	6	0	6	0	6	0	8	0	9	0	7	0	8	0	8	0
Feature Type (riffle, run, or pool)	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

1 MAXIMUM

0.8 MEDIAN

Signed: Aaron Ball Date: 9/28/07

WBID # 1326
 Site # 3

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 9/28/07 1:45	Site Location Description (e.g. road crossing):
Personnel: Larissa Brown, Aaron Ball	Upstream of crossing NW 100
Current Weather Conditions: clear	Facility Name: Lamar Sanitary and Demolition
Weather conditions for the past 10 days: 4 in rain	Permit Number: MO0112046
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)			
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0377011	4169283	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0376863	4169425	

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
86	Upstream	87	Downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 1326
Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input checked="" type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments:				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: None				

Substrate:

% Cobble	60	% Gravel	% Sand	% Silt	30	% Mud/Clay	10%	Bedrock
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Aquatic Vegetation:

Rooted vegetation, 10%

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 1326
Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

None

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: Aaron Ball Date of Survey: 9/28/2007

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>1326</u> Site #: <u>3</u> Estimated Channel Incision: <u>3</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0377011</u> UTM Y: <u>4169283</u> +/- <u> </u> (meters) 11 UTM X: <u>0376863</u> UTM Y: <u>4169425</u> +/- <u> </u> (meters) Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown, Aaron Ball</u>	Dissolved Oxygen Date: <u>9/28/07</u> Time: <u>1:45</u> DO Meter Dissolved Oxygen: <u>Not Working</u> (mg/L) Dissolved Oxygen: <u> </u> (% sat) Specific Cond: <u> </u> (µS/cm) Water Temperature: <u> </u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.5	0.2	0.1	0.3	0.8	0.1	0.9	0.1	0.7	0.3	0.8	0.15	0.5	0.5	1	0.45	0.6	0.1	0.5	0.1	0.1	0
2	1	0.2	0.2	0.35	1.6	0.2	1.8	0	1.4	0.5	1.6	0.3	1	0.5	2	0.6	1.2	0.2	1	0.2	0.2	0
3	1.5	0.15	0.3	0.35	2.4	0.2	2.7	0.1	2.1	0.3	2.4	0.3	1.5	0.6	3	0.7	1.8	0.3	1.5	0.2	0.3	0
4	2	0.15	0.4	0.4	3.2	0.2	3.6	0.25	2.8	0.2	3.2	0.3	2	0.65	4	0.7	2.4	0.4	2	0.2	0.4	0
5	2.5	0.2	0.5	0.35	4	0.2	4.5	0.7	3.5	0.55	4	0.2	2.5	0.6	5	0.8	3	0.5	2.5	0.2	0.5	0
6	3	0.2	0.6	0.4	4.8	0.2	5.4	0.8	4.2	0.5	4.8	0.25	3	0.5	6	0.85	3.6	0.6	3	0.2	0.6	0.05
7	3.5	0.2	0.7	0.35	5.6	0.2	6.3	0.7	4.9	0.5	5.6	0.2	3.5	0.4	7	0.55	4.2	0.4	3.5	0.25	0.7	0.05
8	4	0.3	0.8	0.3	6.4	0.3	7.2	0.5	5.6	0.5	6.4	0.2	4	0.4	8	0.5	4.8	0.3	4	0.25	0.8	0.05
9	4.5	0.25	0.9	0.3	7.2	0.5	8.1	0.2	6.3	0.35	7.2	0.25	4.5	0.1	9	0.25	5.4	0.2	4.5	0.1	0.9	0
Right Bank	5	0	1	0	8	0	9	0	7	0	8	0	5	0	10	0	6	0	5	0	1	0
Feature Type	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		riffle	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

0.85 MAXIMUM

0.25 MEDIAN

Signed: Aaron Ball Date: 9/28/07

WBID # 1326
 Site # 4

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 9/28/07 2:30pm	Site Location Description (e.g. road crossing):
Personnel: Larissa Brown, Aaron Ball	Sate HWY N crossing
Current Weather Conditions: Clear	Facility Name: Lamar Sanitary and Demolition
Weather conditions for the past 10 days: 4 in rain	Permit Number: MO0112046
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)			
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0377083	4173214	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0377024	4173426	

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
88	Downstream	89	Upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 1326
Site # 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input checked="" type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments:				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: None				

Substrate:

% Cobble	10	% Gravel	% Sand	50	% Silt	40	% Mud/Clay	% Bedrock
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Aquatic Vegetation:

None

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 1326
Site # 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

None

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: Aaron Ball Date of Survey: 9/28/2007

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>1326</u> Site #: <u>4</u> Estimated Channel Incision: <u>5</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0377083</u> UTM Y: <u>4173214</u> +/- <u> </u> (meters) 11 UTM X: <u>0377024</u> UTM Y: <u>4173426</u> +/- <u> </u> (meters) Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown, Aaron Ball</u>	Dissolved Oxygen Date: <u>9/28/07</u> Time: <u>2:30</u> DO Meter Dissolved Oxygen: <u>Not Working</u> (mg/L) Dissolved Oxygen: <u> </u> (% sat) Specific Cond: <u> </u> (µS/cm) Water Temperature: <u> </u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.7	0.25	0.5	0.1	0.6	0.15	0.8	0.15	0.7	0.4	0.9	0.5	0.4	0.25	0.9	0.7	0.3	0.15	0.4	0.1	0.2	0.2
2	1.4	0.6	1	0.1	1.2	0.35	1.6	0.3	1.4	0.6	1.8	1	0.8	0.45	1.8	0.6	0.6	0.1	0.8	0.3	0.4	0.2
3	2.1	0.75	1.5	0.15	1.8	0.4	2.4	0.5	2.1	0.75	2.7	1	1.2	0.35	2.7	0.4	0.9	0.2	1.2	0.4	0.6	0.25
4	2.8	0.75	2	0.1	2.4	0.4	3.2	0.7	2.8	0.85	3.6	1	1.6	0.35	3.6	0.35	1.2	0.25	1.6	0.4	0.8	0.25
5	3.5	0.75	2.5	0.1	3	0.5	4	0.75	3.5	1	4.5	1	2	0.4	4.5	0.35	1.5	0.2	2	0.4	1	0.2
6	4.2	0.75	3	0.2	3.6	0.5	4.8	0.8	4.2	1	5.4	1	2.4	0.35	5.4	0.4	1.8	0.15	2.4	0.3	1.2	0.2
7	4.9	0.75	3.5	0.2	4.2	0.5	5.6	0.8	4.9	1	6.3	1	2.8	0.3	6.3	0.35	2.1	0.1	2.8	0.3	1.4	0.2
8	5.6	0.6	4	0.2	4.8	0.3	6.4	0.7	5.6	1	7.2	0.9	3.2	0.25	7.2	0.35	2.4	0.1	3.2	0.25	1.6	0.15
9	6.3	0.3	4.5	0.2	5.4	0.1	7.2	0.45	6.3	0.95	8.1	0.85	3.6	0.15	8.1	0.15	2.7	0.1	3.6	0.1	1.8	0.1
Right Bank	7	0	5	0	6	0	8	0	7	0	9	0	4	0	9	0	3	0	4	0	2	0
Feature Type (riffle, run, or pool)	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

1 MAXIMUM

0.35 MEDIAN

Signed: Aaron Ball Date: 9/28/07

WBID # 1326
 Site # 5

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10/8/07 12:20	Site Location Description (e.g. road crossing):
Personnel: Drew Dodson, Aaron Ball	Jack Murphy's land
Current Weather Conditions: overcast	Facility Name: Lamar Sanitary and Demolition
Weather conditions for the past 10 days: 4 in rain	Permit Number: MO0112046
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)			
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:
	0378253	4166757	18 feet
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:
	0378066	4166652	18 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
5	upstream	6	downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 1326
Site # 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments:				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: None				

Substrate:

% Cobble	10	% Gravel	% Sand	10	% Silt	80	% Mud/Clay	% Bedrock
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Aquatic Vegetation:

2% algae on the bottom

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: Algae
Surface Deposit:	<input type="checkbox"/> Oil	<input checked="" type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 1326
Site # 5

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

None

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: Aaron Ball Date of Survey: 10/8/2007

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>1326</u> Site #: <u>5</u> Estimated Channel Incision: <u>4</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0378253</u> UTM Y: <u>4166751</u> +/- <u>5.5</u> (meters) 11 UTM X: <u>0378066</u> UTM Y: <u>4166652</u> +/- <u>5.5</u> (meters) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>140</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Drew Dodson, Aaron Ball</u>	Dissolved Oxygen Date: <u>10/8/07</u> Time: <u>12:20</u> DO Meter Dissolved Oxygen: <u>Not Working</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: _____ (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.6	0.15	0.8	0.25	0.7	0.3	0.8	0.15	0.8	0.2	0.9	0.55	0.7	0.4	0.6	0.1	0.8	0.2	0.8	0.55	0.6	0.65
2	1.2	0.2	1.6	0.25	1.4	0.45	1.6	0.15	1.6	0.2	1.8	0.95	1.4	0.7	1.2	0.15	1.6	0.25	1.6	1	1.2	0.95
3	1.8	0.45	2.4	0.5	2.1	0.7	2.4	0.25	2.4	0.3	2.7	0.7	2.1	0.75	1.8	0.15	2.4	0.3	2.4	1	1.8	0.8
4	2.4	0.7	3.2	0.75	2.8	1	3.2	0.35	3.2	0.5	3.6	0.9	2.8	0.9	2.4	0.15	3.2	0.3	3.2	1	2.4	0.8
5	3	1	4	0.45	3.5	1	4	0.5	4	0.5	4.5	0.95	3.5	0.8	3	0.15	4	0.5	4	0.8	3	0.8
6	3.6	1	4.8	0.1	4.2	1	4.8	0.55	4.8	0.5	5.4	0.85	4.2	0.55	3.6	0.15	4.8	0.6	4.8	0.6	3.6	0.8
7	4.2	1	5.6	0.15	4.9	1	5.6	0.7	5.6	0.6	6.3	0.65	4.9	0.55	4.2	0.15	5.6	0.6	5.6	0.55	4.2	0.8
8	4.8	1	6.4	0.2	5.6	1	6.4	0.75	6.4	0.6	7.2	0.3	5.6	0.55	4.8	0.1	6.4	0.5	6.4	0.4	4.8	0.75
9	5.4	0.5	7.2	0.15	6.3	0.3	7.2	0.5	7.2	0.5	8.1	0.2	6.3	0.3	5.4	0.05	7.2	0.4	7.2	0.4	5.4	0.5
Right Bank	6	0	8	0	7	0	8	0	8	0	9	0	7	0	6	0	8	0	8	0	6	0
Feature Type (riffle, run, or pool)	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

1 MAXIMUM

0.5 MEDIAN

Signed: Aaron Ball Date: 10/8/07

WBID # 1326
 Site # 5

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10/8/07 13:56	Site Location Description (e.g. road crossing):
Personnel: Drew Dodson, Aaron Ball	HWY V
Current Weather Conditions: overcast	Facility Name: Lamar Sanitary and Demolition
Weather conditions for the past 10 days: 4 in rain	Permit Number: MO0112046
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)			
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:
	0379424	4163171	24 feet
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:
	0379579	4162983	28 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
7	downstream	8	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 1326
Site # 6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:

Comments:

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering

comments/other:

None

Substrate:

% Cobble	% Gravel	% Sand	10 % Silt	70 % Mud/Clay	20 % Bedrock
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Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 1326
Site # 6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

None

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: Aaron Ball Date of Survey: 10/8/2007

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>1326</u> Site #: <u>6</u> Estimated Channel Incision: <u>5</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <div style="display: flex; justify-content: space-between;"> <div> 01 UTM X: <u>0379424</u> UTM Y: <u>4163171</u> 11 UTM X: <u>0379579</u> UTM Y: <u>4162983</u> </div> <div style="text-align: right;"> <u>+/- 7.3</u> (meters) <u>+/- 8.5</u> (meters) </div> </div> Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>120</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Drew Dodson, Aaron Ball</u>	Dissolved Oxygen Date: <u>10/8/07</u> Time: <u>13:56</u> DO Meter Dissolved Oxygen: <u>Not Working</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: _____ (°C)
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Transect Cross-Section

	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Station																						
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.5	0.2	0.5	0.3	0.6	0.45	0.6	0.2	0.7	0.7	0.7	0.7	0.9	0.4	0.9	0.5	0.9	0.3	0.8	0.45	0.9	0.4
2	1	0.4	1	0.5	1.2	0.8	1.2	0.2	1.4	0.9	1.4	0.95	1.8	0.6	1.8	0.8	1.8	0.6	1.6	0.7	1.8	0.7
3	1.5	0.9	1.5	0.6	1.8	1	1.8	0.35	2.1	1	2.1	0.9	2.7	0.7	2.7	1	2.7	0.7	2.4	0.8	2.7	0.8
4	2	0.8	2	0.8	2.4	1	2.4	0.55	2.8	1	2.8	0.7	3.6	0.3	3.6	1	3.6	0.7	3.2	0.9	3.6	0.7
5	2.5	0.6	2.5	0.8	3	0.85	3	0.5	3.5	1	3.5	0.5	4.5	0.25	4.5	1	4.5	0.8	4	0.9	4.5	0.65
6	3	0.5	3	0.75	3.6	0.7	3.6	0.4	4.2	1	4.2	0.3	5.4	0.75	5.4	1	5.4	0.9	4.8	0.9	5.4	0.75
7	3.5	0.45	3.5	0.65	4.2	0.5	4.2	0.3	4.9	1	4.9	0.5	6.3	0.85	6.3	1	6.3	0.85	5.6	0.75	6.3	0.65
8	4	0.4	4	0.45	4.8	0.3	4.8	0.2	5.6	1	5.6	0.5	7.2	0.7	7.2	0.8	7.2	0.6	6.4	0.5	7.2	0.4
9	4.5	0.25	4.5	0.3	5.4	0.1	5.4	0.1	6.3	0.7	6.3	0.4	8.1	0.6	8.1	0.4	8.1	0.3	7.2	0.3	8.1	0.3
Right Bank	5	0	5	0	6	0	6	0	7	0	7	0	9	0	9	0	9	0	8	0	9	0
Feature Type	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

(riffle, run, or pool)

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

1 MAXIMUM

0.65 MEDIAN

Signed: Aaron Ball Date: 10/8/07

WBID# 1326



Site# 1 Photo ID# 81, Downstream



Site# 1 Photo ID# 82, Upstream



Site# 2 Photo ID# 83, Downstream



Site# 2 Photo ID# 84, Upstream

WBID# 1326



Site# 3 Photo ID# 86, Upstream



Site# 3 Photo ID# 87, Downstream



Site# 4 Photo ID# 88, Downstream



Site# 4 Photo ID# 89, Upstream

WBID# 1326



Site# 5 Photo ID# 5, Upstream



Site# 5 Photo ID# 6, Downstream



Site# 6 Photo ID# 7, Downstream



Site# 6 Photo ID# 8, Upstream